



Water Cooled Air Conditioners



WPC • WHC • WSC

Installation, Operation And Maintenance Manual

WPC • WHC • WSC INSTALLATION



WHC Series

LOCATING THE UNIT

In locating the unit, consideration should be given to space requirements, floor strength, water supply, power supply, sewer for condensate and condensate drain. In addition to space required for the unit, consideration should be given for service clearance and maintenance.

WSC PRE-INSTALLATION

The water cooled system consists of a condensing unit designed for installation with refrigerant lines and matching evaporator coil. Before beginning the installation, make certain you have received the proper system components for your requirements.

ELECTRICAL CONNECTIONS

All units are wired at the factory and require connection of the power supply to the unit control box. Power at the unit must be within 10% of rated voltage, both during normal operation and starting periods.

ALL WIRING SHOULD COMPLY WITH LOCAL AND NATIONAL CODES.

THE COMPRESSOR AND FAN MOTORS (if applicable) ARE INTERNALLY PROTECTED.

WATER VALVE

The Water Regulating Valve is adjustable (by means of stem on top of valve) to control refrigerant system head pressure. Counter clockwise rotation of the handle increases head pressure and clockwise rotation decreases the head pressure.

It will be necessary to field adjust the valve because of variance in water pressure, flow rates and temperature encountered.

Fasten a service head pressure gauge to the service fitting on the compressor discharge line to determine the head pressure. The optimum condition is 230 p.s.i.a.



WPC Series



OPERATION OF SYSTEM

System is controlled by a room thermostat. Place system switch on the thermostat to the “cool” position.

Place the fan switch to the “on” position for continuous fan operation or the “auto” position to cycle the blower on and off with the compressor.

CHECK OUT OF UNIT

1. Turn the thermostat Heat/Cool switch to “off”. Turn the thermostat fan switch to “auto”.
2. Turn all power on except line voltage (230v) to condensing unit.
3. Turn fan switch at thermostat to “on”: blower should run on cooling speed. Reset to “auto”; blower should turn off.
4. Set the room thermostat above 30°C, turn selector switch to cool. Move thermostat below indicated room temperature; the blower should run on a cooling speed and a click of the compressor contactor should be heard in the condensing unit. If the contactor cannot be heard, check visually that the contacts are closed.
5. Again, set room temperature above 30°C. Turn selector switch to heat. Furnace should start to heat. When plenum temperature reaches fan on setting, the blower should run at heating speed. turn thermostat down below 15°C, to shut off heat. After a few minutes the blower should turn off.

6. Turn on the line voltage to the condensing unit.

7. Set the thermostat to 15°C. The compressor contactor should close and the compressor starts to work. The furnace blower should start and run on the cooling speed.

8. With the unit operating, close all the doors, windows and openings to the house. Set the thermostat to the desired setting, usually 22°C, allow the unit to condition the house. Don't be alarmed if the unit runs several hours or even a full day to reduce the heat and moisture in the house on the initial run. This is normal for any air conditioning system.

SPECIAL NOTE

In the event of a compressor motor failure or burnout; normally cleaning the metering device, installing a suction line filter drier will be sufficient to remove contaminants resulting from the failure.

After a few days of operation, the drier core can be removed from the suction line filter.



WSC Series

GENERAL SERVICE GUIDE

PROBLEM

POSSIBLE CAUSE
REMEDY

POSSIBLE CAUSE
REMEDY

POSSIBLE CAUSE
REMEDY

POSSIBLE CAUSE
REMEDY

Fan and compressor will not start.

Power Off.

Check main circuit fuses and wiring.

(a) Faulty unit wiring (b) Loose wiring connections.

(a) Check wiring diagram (b) Tighten terminals and wiring connections.

24 volt supply faulty.

Check transformer.

Thermostat defective.

Replace.

PROBLEM

POSSIBLE CAUSE
REMEDY

POSSIBLE CAUSE
REMEDY

POSSIBLE CAUSE
REMEDY

POSSIBLE CAUSE
REMEDY

POSSIBLE CAUSE
REMEDY

Fan operates, but compressor will not start.

Incorrect thermostat setting.

Adjust thermostat.

Thermostat defective.

Replace.

Compressor overloads or thermostat open.

Check reasons for overload open: excessive heat.

High or low pressure control tripped.

Re-set and check water regulating valve and water supply.

If switch is defective, then replace.

Contactor faulty.

Replace.

PROBLEM

POSSIBLE CAUSE
REMEDY

POSSIBLE CAUSE
REMEDY

POSSIBLE CAUSE
REMEDY

POSSIBLE CAUSE
REMEDY

Compressor motor hums but will not start.

Low or incorrect voltage.

Check with power company for required voltage.

Faulty capacitor.

Replace.

Faulty Hard Start Kit.

Replace.

Seized compressor.

Replace.

PROBLEM

POSSIBLE CAUSE
REMEDY

POSSIBLE CAUSE
REMEDY

POSSIBLE CAUSE
REMEDY

POSSIBLE CAUSE
REMEDY

Fan motor starts but cuts off on internal protector.

Low voltage.

Check with power company.

Defective bearings.

Replace motor.

Internal fault.

Replace motor.

High amp draw.

Replace motor.

PROBLEM**POSSIBLE CAUSE
REMEDY****POSSIBLE CAUSE
REMEDY****POSSIBLE CAUSE
REMEDY****POSSIBLE CAUSE
REMEDY****High Suction Pressure.**

Water supply inadequate.

Check water regulating valve setting or water supply.

Excessive load on unit.

High air flow, high inlet temperature as in initial start or pull down.

Defective compressor.

If head pressure is low or normal at this condition, compressor may be defective.

Overcharge of refrigerant.

Usually associated with high discharge pressure. Remove excess gas.

PROBLEM**POSSIBLE CAUSE
REMEDY****High Discharge Pressure.**

Water supply to condenser inadequate.

(a) Adjust or, if defective, replace water regulating valve.

(b) Water pressure low, or supply lines too small.

(c) Water temperature too high.

(d) Condenser surface fouled.

Recognized by low temperature water rise through condenser.

**POSSIBLE CAUSE
REMEDY**

Overcharge of refrigerant.

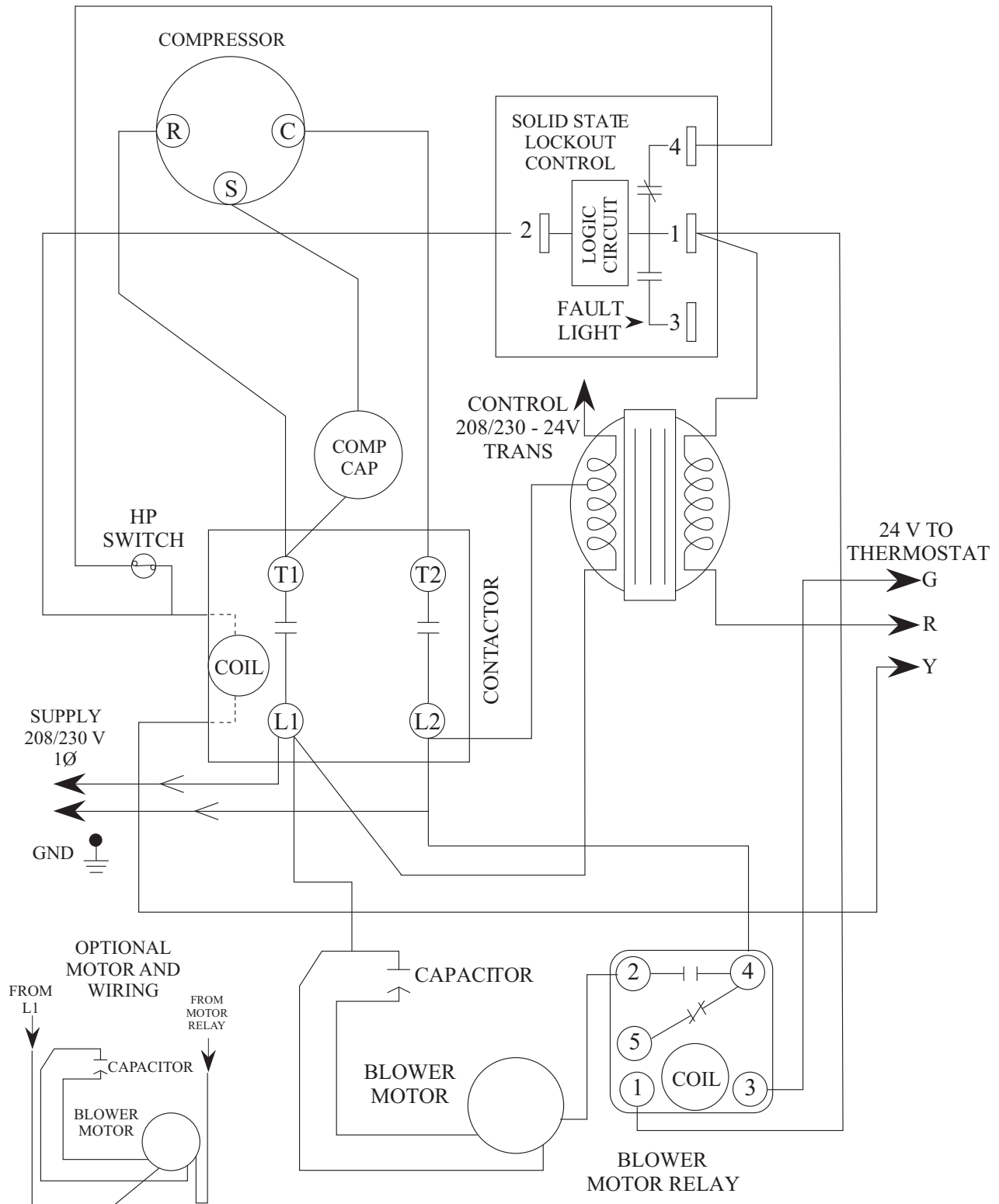
Remove refrigerant, and balance to normal.

**POSSIBLE CAUSE
REMEDY**

Non-condensibles in system.

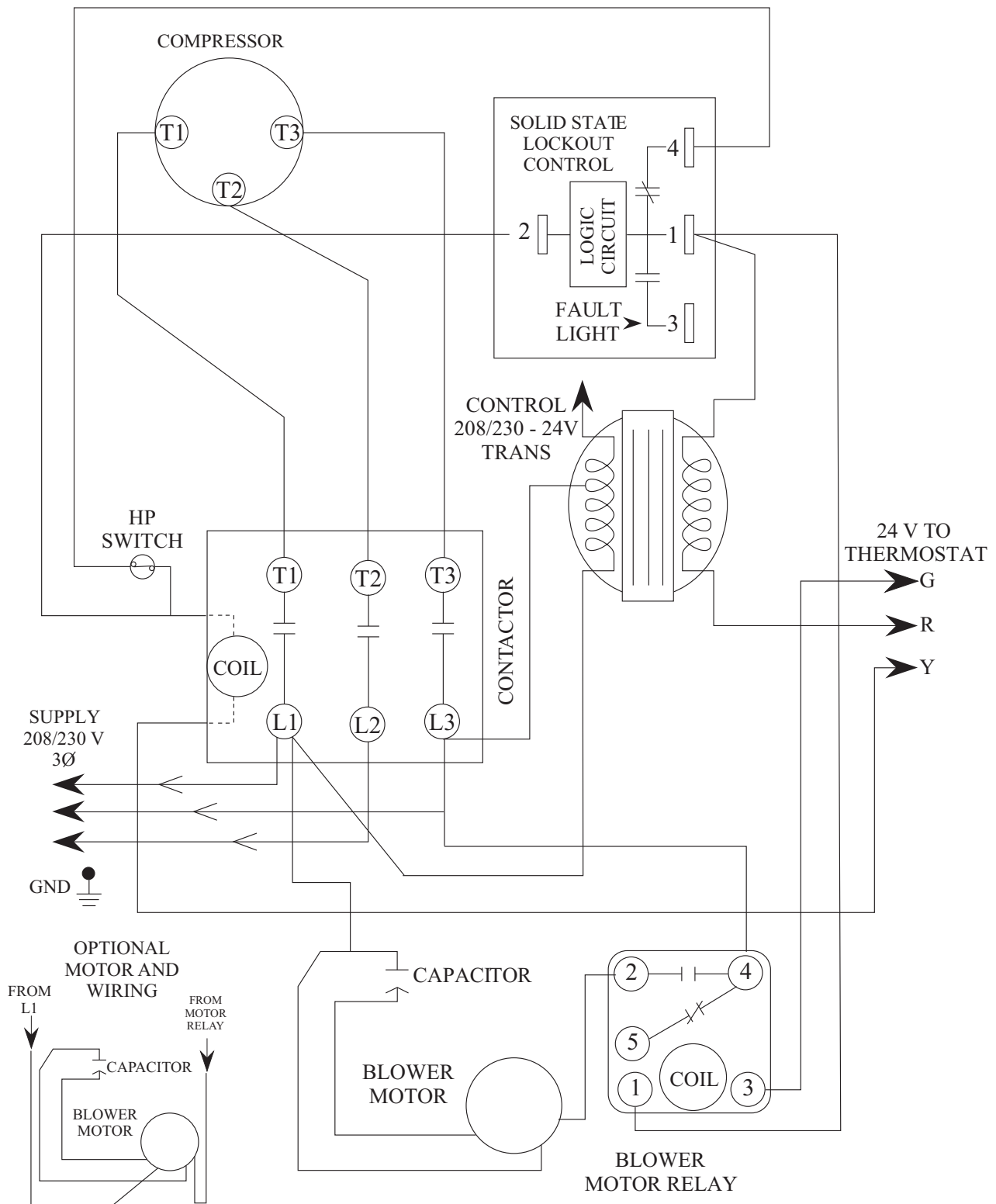
Remove refrigerant and evacuate system.

WPC / WHC 12 - 60 (208/230/60/1)



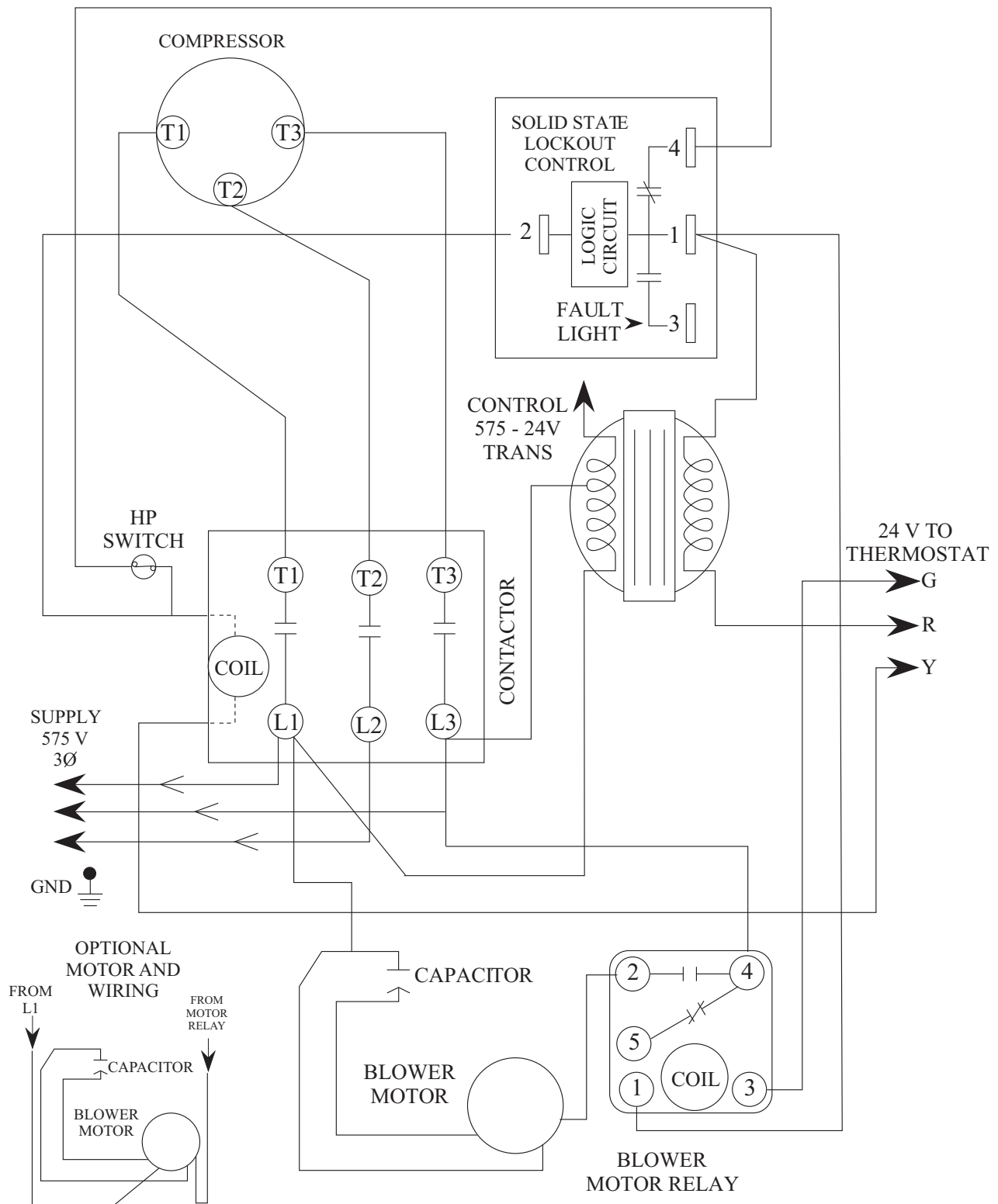
DANGER: ELECTRICAL SHOCK HAZARD

WPC / WHC 36 - 60 (208/230/60/3)



DANGER: ELECTRICAL SHOCK HAZARD

WPC / WHC 36 - 60 (575/60/3)



DANGER: ELECTRICAL SHOCK HAZARD

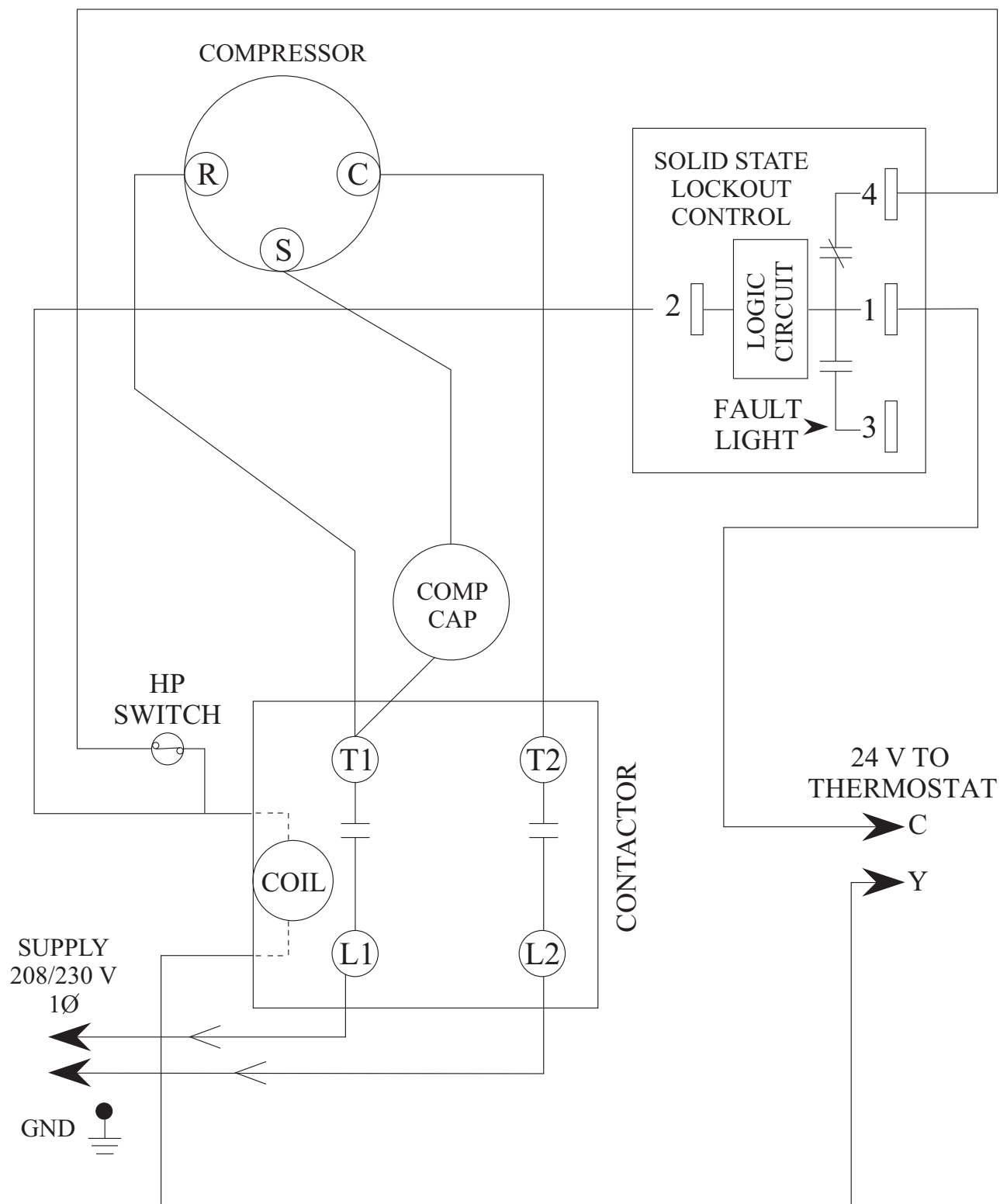
(208/230/60/3 460/60/3 575/60/3)



(208/230/60/3 460/60/3 575/60/3)

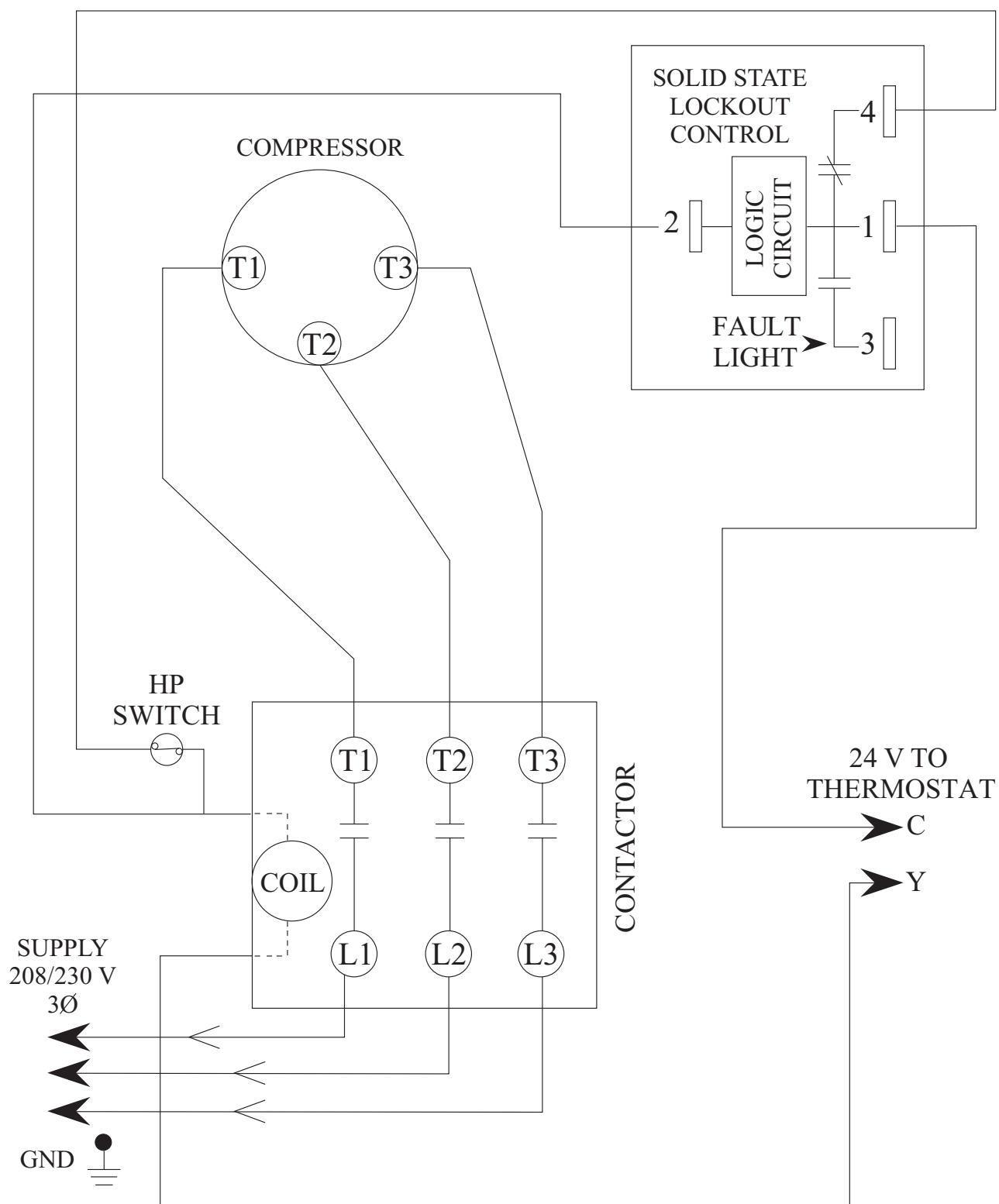


WSC 12 - 60 (208/230/60/1)



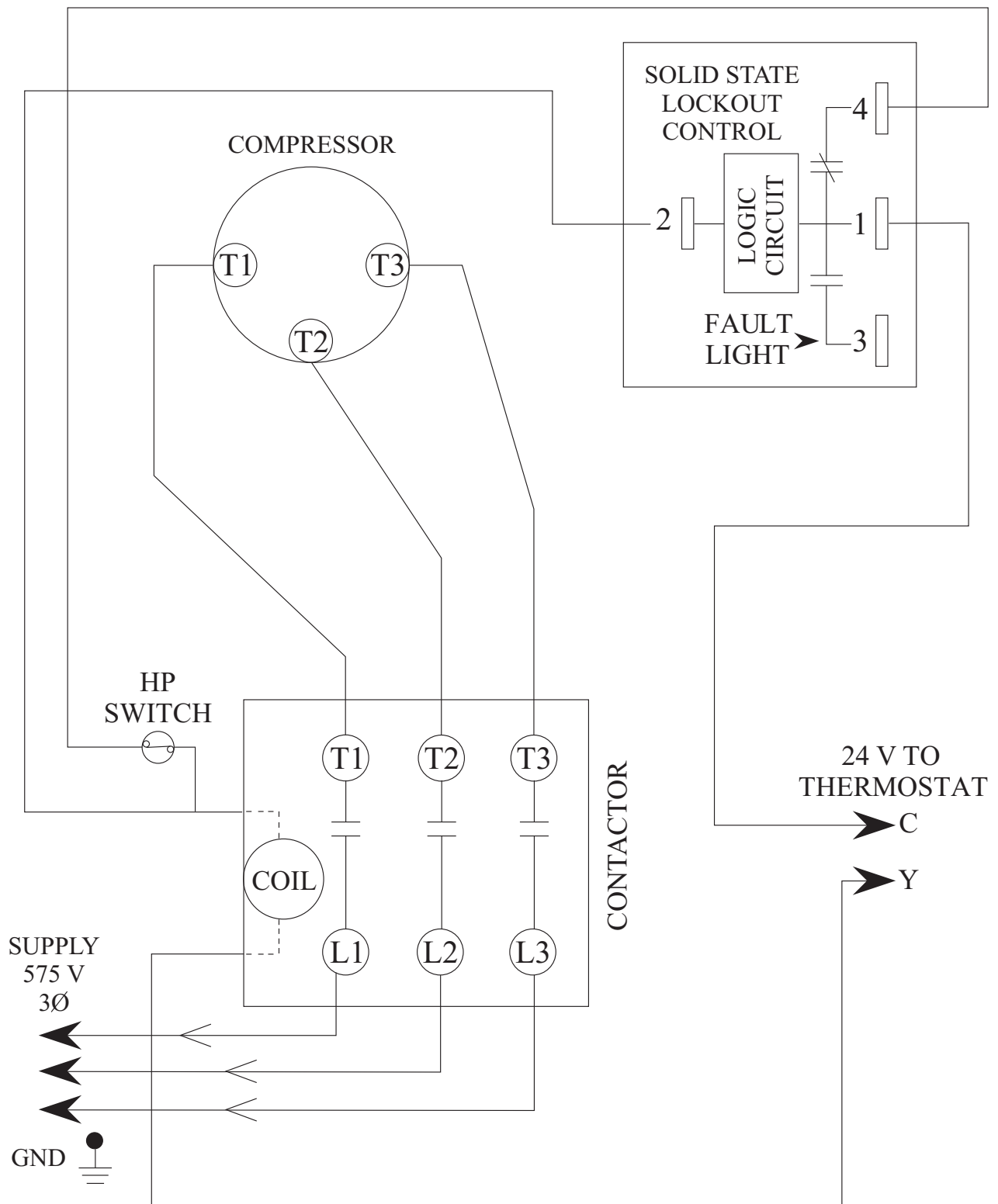
DANGER: ELECTRICAL SHOCK HAZARD

WSC 36 - 60 (208/230/60/3)



DANGER: ELECTRICAL SHOCK HAZARD

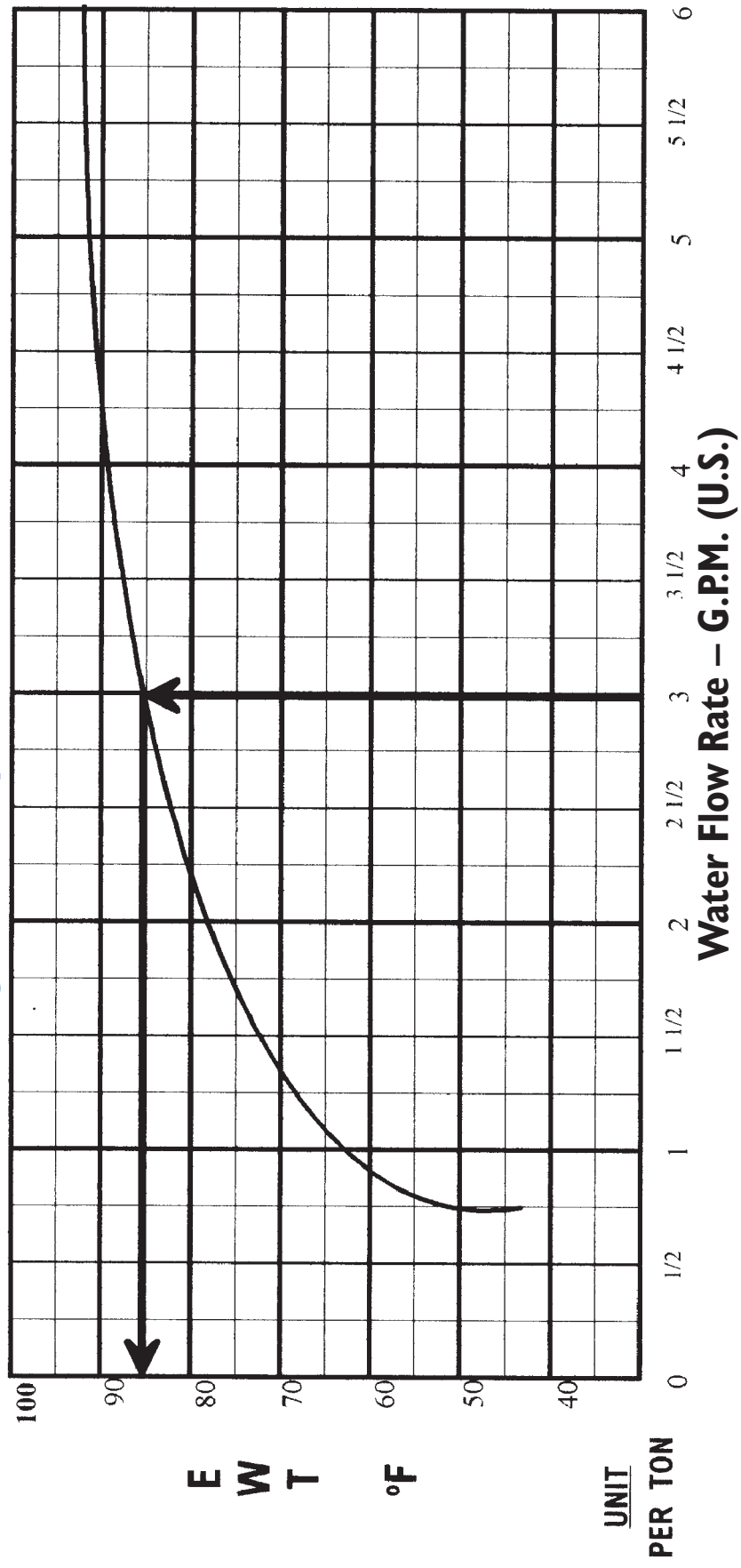
WSC 36 - 60 (575/60/3)



DANGER: ELECTRICAL SHOCK HAZARD

WPC, WHC, WPCP & WSC WATER CONSUMPTION CHART

Entering Water Temperatures vs. Water Flow Rate



Parts Listing for WPC/WHC/WSC 12 THRU 120-5

PARTS LISTING FOR *COMFORT-AIRE* *by* *AITONS'* *WPC/WHC/WSC 12 THRU 120-5*

MODEL	MOTOR	BLOWER WHEEL	COMPRESSOR	CONTACTOR	MOTOR	CAPACITOR COMP	WATER VALVE
WPC/WHC12	FM0001	FB0002	RC0001	EO0001	EC0001	EC0005	VW0001
WPC/WHC15	FM0001	FB0002	8000-632	EO0001	EC0001	EC0007	VW0001
WPC/WHC18 WSC *	FM0001	FB0002	RC0002	EO0001	EC0001	EC0007	VW0001
WPC/WHC24 WSC *	FM0001	FB0002	RC0004	EO0001	EC0001	EC0007	VW0001
WPC/WHC30 WSC *	FM0001	FB0002	RC0005	EO0001	EC0001	EC0007	VW0001
WPC/WHC36-1 WSC *	FM0002	FB0003	RC0006	EO0001	EC0001	EC0010	VW0001
WPC/WHC36-3 WSC *	FM0002	FB0003	RC0010	EO0002	EC0001		VW0001
WPC/WHC44-1	FM0002	FB0003	RC0007	EO0001	EC0001	EC0010	VW0001
WPC/WHC44-3	FM0002	FB0003	RC0011	EO0002	EC0001		VW0001
WPC/WHC48 WSC *	FM0004	FB0004	RC0008	EO0001	EC0015	EC0010	VW0002
WPC/WHC60-1 WSC *	FM0004	FB0004	RC0009	EO0000	EC0015	EC0011	VW0002
WPC/WHC60-3 WSC *	FM0004	FB0004	RC0013	EO0002	EC0015		VW0002
WPC/WHC60-5 WSC *	FM0005	FB0004	RC0021	EO0002	EC0015		VW0002
WPC/WHC90-3	FM0008/FM0004	FB0005/FB0004	RC0012 (2)	EO0002	EC0015		VW0002
WPC/WHC90-5	FM0009/FM0005	FB0005/FB0004	RC0020 (2)	EO0002			VW0002
WPC/WHC120	FM0010/FM0004	FB0006/FB0004	RC0013 (2)	EO0002			VW0002
WPC/WHC120-5	FM0011/FM0005	FB0006/FB0004	RC0021 (2)	EO0002			VW0002

REVISED 08/14/01



www.comfort-aire.com

LIMITED WARRANTY

Water Cooled Equipment

AITONS' EQUIPMENT INC. warrants for one year its products to be free from defects in material and workmanship when installed and operated pursuant to manufacturers instructions.

In addition, the compressor is warranted for an additional 4 years.

If, upon examination by **AITONS' EQUIPMENT INC.**, a part is deemed to be defective under this warranty, we will repair or replace that part F.O.B. Guelph, Ontario free of charge, exclusive of labour.

This warranty is to the exclusion of any statutory warranty expressed or implied.

The **PURCHASER FILLS IN AND RETAINS THIS WARRANTY** (The Serial Number of your unit is recorded on computer when shipped.)

MODEL _____ SERIAL number _____

DATE OF INSTALLATION _____

INSTALLER'S NAME _____

AITONS' EQUIPMENT INC.

Guelph, Ontario

www.aitons.com

info@aitons.com